Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

NOTES FROM PACIFIC COAST OBSERVATORIES.

NOTE ON COMET *e* 1910 (CERULLI-FAYE).

On November 10th a telegram was received from the Harvard College Observatory announcing the following position of a new comet discovered by Professor CERULLI at Teramo, Italy, November 9.3131 Gr. M. T.; right ascension, $3^h\ 38^m\ 35^s.9$; declination, $+8°\ 43'\ 20''$.

It is customary at the Students' Observatory to compute an orbit of every new comet as soon as three observations are available. The next two observations received of Cerulli's Comet were one by EPPES (U. S. Naval Observatory) on the 11th, and one by YOUNG (Lick Observatory) on the 13th.

An attempt was made to pass a parabola through these three observations, but the computations showed that no satisfactory parabola could be passed through them. The solution was then carried forward without hypothesis regarding the eccentricity, and resulted in a short-period orbit.

The failure to represent the observations by a parabola, and the similarity of the parabolic elements i, ω, Ω, and q to the corresponding elements of Faye's Comet, led Professor LEUSCHNER to suspect the identity of Cerulli's and Faye's comets and to announce the same by telegram with our elements.

The parabolic elements are:—

$$T = 1910 \text{ November } 19.487 \text{ Gr. M. T.}$$

$$\left.\begin{aligned} \omega &= 200°\ 17'.4 \\ \Omega &= 212\ \ \ 57\ .8 \\ i &= \ \ 18\ \ \ 17\ .1 \end{aligned}\right\} 1910.0$$

$$q = 2.1958$$

The elliptic elements are:—

$$T = 1910 \text{ November } 12.413 \text{ Gr. M. T.}$$
$$\left.\begin{array}{l}\omega = 206^\circ\ 20'.6 \\ \Omega = 205\ \ 29\ .1 \\ i = \ \ 10\ \ 14\ .2\end{array}\right\} 1910.0$$
$$e = 0.5459$$
$$\mu = 512''.34$$
$$\log a = 0.5603$$
$$\text{Period} = 6.926 \text{ years}$$

The elements of Faye's Comet, with which the comparison was made, are those derived by STRÖMGREN for the return of the comet in 1903.

They are as follows:—

$$T = 1903 \text{ June } 3.64 \text{ Berlin M. T.}$$
$$\left.\begin{array}{l}\omega = 198^\circ\ 58'.8 \\ \Omega = 206\ \ 28\ .0 \\ i = \ \ 10\ \ 37\ .5\end{array}\right\} 1900.0$$
$$e = 0.5652$$
$$\mu = 480''.16$$

Owing to the unfavorable position of the comet in 1903, it was not found during that apparition. According to STRÖMGREN's elements, if perturbations be neglected from 1903 to 1910, Faye's Comet should have passed perihelion October 24, 1910.

There are two methods available for the identification of comets. The first is that of comparison of the elements; the second is known as TISSERAND's criterion for the identity of comets (*Bulletin Astronomique,* 6, 289, and Méchanique Céleste, **4**, 203). The equation[1] of identification in which the

$$\frac{1}{a_1} + 2\sqrt{a_1(1 - e^2_1)} \cos i_1 = \frac{1}{a_2} + 2\sqrt{a_2(1 - e^2_2)} \cos i_2$$

subscripts 1 and 2 refer to the comets that are to be compared. This relation between the two comets is necessary, but not sufficient for their identification. Calling the left-hand member of the equation C_1 and the right-hand member C_2, the numerical values for Faye's and Cerulli's comets are C_1 (Faye's) $= 3.4223$, C_2 (Cerulli's) $= 3.4186$.

[1] Moulton's Celestial Mechanics, p. 203.

It is hardly to be suspected that the accidental errors in the observations upon which the foregoing computations are based, can be such as to render accidental the agreement between our elliptic elements and those of Faye's Comet.

The comet is in a favorable position for observation, and is visible in a small telescope. Its nearest approach to the Earth was about 65,000,000 miles. Its perihelion distance is about 160,000,000 and aphelion 521,000,000 miles. When the comet is passing aphelion it is a little beyond the orbit of *Jupiter.*

It is to be noted that all of the foregoing results are based on an orbit computed from a short arc, and it is to be expected that the elements will be somewhat different for an orbit computed from a long arc. All the computations were made by Leuschner's Short Method.

W. F. Meyer,
Sophia H. Levy.

Berkeley Astronomical Department, December 9, 1910.